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10/769,030	01/30/2004	Satoshi Oshima	16869S-104700US	7614

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EXAMINER	
CAMPOS, YAIMA	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/769,030	OSHIMA ET AL.	
	Examiner	Art Unit	
	YAIMA CAMPOS	2185	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10,11 and 24-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-11 and 24-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. As per the instant Application having Application number 10/769,030, the examiner acknowledges the applicant's submission of the amendment dated February 11, 2008. At this point, claims 10-11 have been amended, claims 1-9 and 12-23 stand cancelled, and claims 24-37 have been added. There are 16 claims pending in the application; there are 2 independent claims and 14 dependent claims, all of which are ready for examination by the examiner. Claims 10-11 and 24-37 are pending.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 11, 2008 has been entered.

REJECTIONS BASED ON PRIOR ART

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 30-32 and 34-37** are rejected under 35 U.S.C. 102(b) as being anticipated by Altschuler et al. (US 6,195,622).

5. As per claim 30, Altschuler discloses A method of operating a storage system comprising: receiving a first command specifying a target computer, a history identifier associated with the target computer, and an activation condition; detecting the activation condition; **[Altschuler discloses storage system wherein storage devices labeled resources 734 and usage logs 746, resource cache 635', combination of resource server 704 and analysis server 750, client 702 (fig. 7a and related text; col. 19, lines 28-35) wherein different clients access resources through server (col. 8, lines 12-32; col. 30, lines 31-41; figure 5 and related text) wherein like users/clients may grouped (col. 8, lines 53-65) wherein server computer generates usage log which include information of a user (or client) ID, a web address where the resource is located, and a time stamp data structure which includes a time and date relative to a reference time (col. 8, lines 13-32; see figs. 1 and 7a and related text) wherein information is stored for each client in a group of clients (col. 8, lines 33-65) and explains usage logs are not updated merely on the basis of the return of the requested pre-fetch resource but only when client requests resources (col. 29,lin 41-45; col. 27, lines 1-6)]** selecting an access history from a plurality of access histories associated with the target computer using the access history identifier; and updating the selected access history with information about data requested by the target computer **[explains usage logs are not updated merely on the basis of the return of the requested pre-fetch resource but only when client requests resources (col. 29,lin 41-45; col. 27, lines 1-6) and explains "sample period" (col. 9, lines 1-16; col. 21, line 64-col. 22, lines 25) for recording usage data]**.

6. As per claim 31, the combination of Altschuler and Cromer discloses The method of claim 30 wherein the first command specifies a physical storage device, and wherein the selected access history comprises a list of storage locations corresponding to the physical storage device **[Altschuler discloses access commands specify resources and usage history comprises a web address where the resource is located (col. 8, lines 13-32; see figs. 1 and 7a and related text)]**.

7. As per claim 32, the combination of Altschuler and Cromer discloses The method of claim 30 wherein the first command includes a computer identifier for specifying the target computer, the method further comprising associating the target computer with the plurality of access histories based upon the computer identifier **[Altschuler discloses usage log includes information of a user (or client) ID, and a time stamp data structure which includes a time and date relative to a reference time (col. 8, lines 13-32; see figs. 1 and 7a and related text)]**.

8. As per claim 34, the combination of Altschuler and Cromer discloses The method of claim 30 wherein updating the selected access history further comprises: receiving a read request from the target computer; and adding information about the read request to the selected access history if the activation condition is detected **[Altschuler discloses usage logs are not updated merely on the basis of the return of the requested pre-fetch resource but only when client requests resources (col. 29,lin 41-45; col. 27, lines 1-6)]**.

9. As per claim 35, the combination of Altschuler and Cromer discloses The method of claim 34 wherein the activation condition specifies an interval of time, and wherein the selected access history is updated if the read request is received during the specified

interval **[Altschuler discloses wherein usage logs are not updated merely on the basis of the return of the requested pre-fetch resource but only when client requests resources (col. 29,lin 41-45; col. 27, lines 1-6) and explains "sample period" (col. 9, lines 1-16; col. 21, line 64-col. 22, lines 25) for recording usage data]**.

10. As per claim 36, the combination of Altschuler and Cromer discloses The method of claim 30 further comprising receiving one or more third commands specifying the target computer and a read-ahead history identifier **[Altschuler discloses see (col. 8, lines 12-32) server-side models are built based on data from many users so that server prefetches data to cache data based on resource transition model and based on resource(s) most recently requested by clients wherein caching/prefetching of resources may be carried out for individual clients or for all clients collectively (col. 30 lines 44-63; col. 3, line 64-col. 4, line 8; col. 4. lines 31-39; col. 4, lines 9-29; col. 25, lines 1-9)]**.

11. As per claim 37, the combination of Altschuler and Cromer discloses The method of claim 36 further comprising: selecting a second access history from the plurality of access histories associated with the target computer using the read-ahead history identifier; and retrieving data from a storage device in accordance with the second access history; and temporarily storing the data retrieved from the storage in a cache memory accessible to the target computer **[Altschuler discloses resource pre-fetching by the client utilizes idle processing between the client and the server wherein "based on the previously requested resource… a list of transitions to other resources, in descending order of probability, is used to pre-fetch other resources. Such pre-**

fetched resources are stored at a client resource cache 624'" (col. 25, lines 1-22, 32-42 and 52-64; col. 26, line 47-col. 27, line 13)].

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. **Claims 10-11 and 24-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Altschuler et al. (US 6,195,622) in view of Cromer et al. (US 6,177,860).

14. As per claim 10, A system including a storage device having a disk device and a cache memory, a management computer, and a plurality of computers connected to said storage device and classified into a plurality of groups, comprising: **[storage devices labeled resources 734 and usage logs 746, resource cache 635', combination of resource server 704 and analysis server 750, client 702 (fig. 7a and related text; col. 19, lines 28-35) wherein different clients access resources through server (col. 8, lines 12-32; col. 30, lines 31-41; figure 5 and related text) wherein like users/clients may grouped (col. 8, lines 53-65)]**

said management computer **for** (*interpreted as intended use, see MPEP 2106 II-C*) transmitting to said storage device one or more first commands containing information for specifying computers in a first group of computers and an access history identifier for each of the specified computers in said first group; **[server computer generates usage**

log which include information of a user (or client) ID and a time stamp data structure which includes a time and date relative to a reference time (col. 8, lines 13-32; see figs. 1 and 7a and related text)]

said storage device **for** (*interpreted as intended use, see MPEP 2106 II-C*) maintaining a plurality of access histories for each computer in the first group of computers wherein, when a computer in said first group of computers specified by said first commands requests data from said storage device, said storage unit records a storage location of the requested data in said disk device as a history that is linked with said access history identifier of said requesting computer specified by said first commands; **[server computer generates usage log which include information of a user (or client) ID, a web address where the resource is located, and a time stamp data structure which includes a time and date relative to a reference time (col. 8, lines 13-32; see figs. 1 and 7a and related text) wherein information is stored for each client in a group of clients (col. 8, lines 33-65)]**

said management computer **for** (*interpreted as intended use, see MPEP 2106 II-C*) transmitting to said storage device a second command containing information **for** (*interpreted as intended use, see MPEP 2106 II-C*) specifying one of said computers in said first group of computers and information **for** (*interpreted as intended use, see MPEP 2106 II-C*) specifying a read-ahead access history identifier for said one of said computers, and said access history information; and wherein, in response to said second command, said storage device reads out data linked with said read-ahead access history identifier from said disk device to said cache memory, **[see (col. 8, lines 12-32) server-side models are built based on data from many users so that server prefetches data**

to cache data based on resource transition model and based on resource(s) most recently requested by clients wherein caching/prefetching of resources may be carried out for individual clients or for all clients collectively (col. 30 lines 44-63; col. 3, line 64-col. 4, line 8; col. 4. lines 31-39) wherein users may be clustered into one or more clusters (col. 31, lines 39-48) wherein usage logs are not updated merely on the basis of the return of the requested pre-fetch resource but only when client requests resources (col. 29,lin 41-45; col. 27, lines 1-6)] after issuing the second command to the storage device, said management computer causes said one of said computers in said first group of computers specified in said second command to start **[resource pre-fetching by the client utilizes idle processing between the client and the server wherein "based on the previously requested resource... a list of transitions to other resources, in descending order of probability, is used to pre-fetch other resources. Such pre-fetched resources are stored at a client resource cache 624" (col. 25, lines 1-22, 32-42 and 52-64; col. 26, line 47-col. 27, line 13) wherein it can be said that when the communication between client and server is idle, and the pre-fetching from the server to the client begins, the client starts, note the client was previously idle]**; however, Altschuler does not disclose expressly said management computer/server causes said one of said computers in said first group of computers specified in said second command to start.

Cromer discloses after issuing the second command to the storage device, said management computer causes said one of said computers in said first group of computers specified in said second command to start as **[a computer network wherein "the server polls the computer by MAC address and wakes up the computer for configuration**

and pre-loading" (col. 3, lines 50-55) wherein data that is preloaded corresponds to "characteristics unique to the operator or workstation to which the computer will be assigned. Examples are the users name, network configuration parameters, and the identity of the programs that will be needed tin the workstation of each computer" (col. 1, lines 35-40)].

Altschuler and Cromer are analogous art in that they are of the same field of endeavor, that is, a system and/or method of memory access and control in a network environment. Cromer suggests that it would have been desirable to incorporate the feature of having a management computer/server cause a computer to start so that preloading/prefetching of relevant data begins into the system of Altschuler because this would allow for fast starting and preloading of information to the computer without user intervention **[(col. 1, lines 50-56; col. 3, lines 50-65)]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Altschuler as suggested by Cromer to incorporate the feature as claimed.

15. As per claim 11, the combination of Altschuler and Cromer discloses A system according to claim 10, wherein said management computer maintains a schedule **for** (*interpreted as intended use, see MPEP 2106 II-C*) interacting with said first group of computers and said storage device, and wherein said management computer transmits said first commands and second command to said storage device based on said schedule **[Atschuler discloses "sample period" (col. 9, lines 1-16; col. 21, line 64-col. 22, lines 25) and prefetching during idle processing (col. 4, lines 9-29; col. 25, lines 1-9)]**.

16. As per claim 24, the combination of Altschuler and Cromer discloses A system according to claim 10, wherein the first commands include activation conditions and

wherein the storage device begins recording the history of a requesting computer upon detecting the activation condition corresponding to that requesting computer **[Atschuler discloses recording client usage data of multiple clients in usage logs (col. 8, lines 13-32) wherein wherein usage logs are not updated merely on the basis of the return of the requested pre-fetch resource but only when client requests resources (col. 29,lin 41-45; col. 27, lines 1-6)]**.

17. As per claim 25, the combination of Altschuler and Cromer discloses A system according to claim 24, wherein the activation condition specify an interval during which the history of requesting computers is recorded at the storage device **[Atschuler discloses wherein usage logs are not updated merely on the basis of the return of the requested pre-fetch resource but only when client requests resources (col. 29,lin 41-45; col. 27, lines 1-6) and explains "sample period" (col. 9, lines 1-16; col. 21, line 64-col. 22, lines 25) for recording usage data]**.

18. As per claim 26, the combination of Altschuler and Cromer discloses A system according to claim 24, wherein the activation conditions specify a time at which the storage device starts recording the history of requesting computers **[The rationale in the rejection to claim 25 is herein incorporated]**.

19. As per claim 27, the combination of Altschuler and Cromer discloses A system according to claim 10, wherein the access histories comprise lists of storage locations corresponding to read requests received directly from one or more of said first group of computers by the storage device **[Altschuler discloses server computer generates usage log which include information of a user (or client) ID, a web address where the resource is located, and a time stamp data structure which includes a time and**

date relative to a reference time (col. 8, lines 13-32; see figs. 1 and 7a and related text) wherein information is stores for each client in a group of clients (col. 8, lines 33-65)].

20. As per claim 28, the combination of Altschuler and Cromer discloses A system according to claim 10, wherein the storage device associates each computer in the first group of computers with its plurality of access histories using a computer identifier **[each computer in the usage log is associated with user or client ID (col. 8, lines 13-32; see figs. 1 and 7a and related text)]**.

21. **Claim 29** is rejected under 35 U.S.C. 103(a) as being unpatentable over Altschuler et al. (US 6,195,622) in view of Cromer et al. (US 6,177,860) as applied to claims 10 and 28 above, and further in view of Parrella, SR. et al. (US 2003/0078964).

22. As per claim 29, the combination of Altschuler and Cromer discloses A system according to claim 28, but does not disclose expressly wherein computer identifiers for the first group of computers change from time to time, and wherein the management computer detects these changes and notifies the storage device of the new identifiers.

Parrella discloses computer identifiers for the first group of computers change from time to time, and wherein the management computer detects these changes and notifies the storage device of the new identifiers as **[a storage system that uses user's characteristics and usage patterns to determine when to cache and for how long and what to prefetch (par. 0013) wherein the system may employ dynamic IP addresses and includes a USER ID to maximize cache performance wherein each time a user with a dynamic IP connects to super cache, the user ID is stored in data table 740 (pars. 0081 and 0121)]**.

Altschuler, Cromer and Parrella are analogous art in that they are of the same field of endeavor, that is, a system and/or method of memory access and control in a network environment. Parrella suggests that it would have been desirable to incorporate the feature of having computer identifiers for the first group of computers change from time to time, and wherein the management computer detects these changes and notifies the storage device of the new identifiers into the combined system of Altschuler and Cromer because this would allow maximized performance as it would "maximize the use of information previously cached for each user with dynamically assigned IP addresses, even though the IP addresses may have changed" **[(pars. 0081 and 0121)]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of Altschuler and Cromer as suggested by Parrella to incorporate the feature as claimed.

23. **Claim 33** is rejected under 35 U.S.C. 103(a) as being unpatentable over Altschuler et al. (US 6,195,622) in view of Cromer et al. (US 6,177,860) as applied to claim 30 above, and further in view of Parrella, SR. et al. (US 2003/0078964).

24. As per claim 33, the combination of Altschuler and Cromer discloses The method of claim 30 but does not disclose expressly receiving, from time to time, second commands with information for updating the computer identifier of the target computer.

Parrella discloses receiving, from time to time, second commands with information for updating the computer identifier of the target computer as **[a storage system that uses user's characteristics and usage patterns to determine when to cache and for how long and what to prefetch (par. 0013) wherein the system may employ dynamic IP addresses and includes a USER ID to maximize cache**

performance wherein each time a user with a dynamic IP connects to super cache, the user ID is stored in data table 740 (pars. 0081 and 0121)].

Altschuler and Parrella are analogous art in that they are of the same field of endeavor, that is, a system and/or method of memory access and control in a network environment. Parrella suggests that it would have been desirable to incorporate the feature of receiving, from time to time, second commands with information for updating the computer identifier of the target computer into the system/method of Altschuler because this would allow maximized performance as it would "maximize the use of information previously cached for each user with dynamically assigned IP addresses, even though the IP addresses may have changed" **[(pars. 0081 and 0121)]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Altschuler as suggested by Parrella to incorporate the feature as claimed.

ACKNOWLEDGMENT OF ISSUES RAISED BY THE APPLICANT

Response to Amendment

25. Applicant's arguments filed on February 11, 2008 have been considered but are moot in view of the new ground(s) of rejection.

CLOSING COMMENTS

Examiner's Note

26. Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified

citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Conclusion

a. STATUS OF CLAIMS IN THE APPLICATION

27. The following is a summary of the treatment and status of all claims in the application as recommended by **M.P.E.P. 707.07(i)**:

a(1) CLAIMS REJECTED IN THE APPLICATION

28. Per the instant office action, claims 10-11 and 24-37 have received a first action on the merits and are subject of a first action non-final.

b. DIRECTION OF FUTURE CORRESPONDENCES

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yaima Campos whose telephone number is (571) 272-1232. The examiner can normally be reached on Monday to Friday 8:30 AM to 5:00 PM.

IMPORTANT NOTE

30. If attempts to reach the above noted Examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Sanjiv Shah, can be reached at the following telephone number: Area Code (571) 272-4098.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 15, 2008

/Yaima Campos/
Examiner, Art Unit 2185

/Sanjiv Shah/
Supervisory Patent Examiner, Art Unit 2185